

### Remarks

Claims 1-36 are pending in the instant application. Claims 32-36 have been withdrawn. Claims 17, 20, 22 and 30, are directly amended herein.

### Election/Restrictions

The Examiner previously had taken the position that pending Claims 1-31 (Group I) and Claims 32-36 (Group II) were directed toward distinct inventions, and restriction was required. A telephonic election of Group I, i.e., Claims 1-31 was made. Applicant hereby affirms the election of Group I, i.e., Claims 1-31 for prosecution in the instant application.

### Drawings

The Examiner had objected to the drawings on the ground that the numerals 520, 524, 820, and 824 depicted in Figs. 6 and 9 thereof are not reflected in the specification. Applicant has provided herewith proposed drawing changes to Figs. 6 and 9 in which the aforementioned numerals are indicated in red ink as being deleted. Review of the proposed drawing amendment and approval thereof is requested.

### Double Patenting

Claim 17 has been provisionally rejected under the judicially created doctrine of double patenting over Claims 1-3 of copending U.S. Application Serial Number 10/669,845, the double patenting rejection being provisional since the conflicting claims have not yet been patented. Moreover, Claims 1, 2, 4, 6, 12, 17, 19, 23, 24, and 31 are also rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 6, 12, 14, 15, 18-20 and 24 of U.S.P.N. 6,630,423 in view of Eyraud et al. (U.S.P.N. 3,022,187). In this regard, The Examiner indicates that U.S.P.N. 6,630,423 teaches the same invention claimed in the indicated claims of the instant Applicant "except for a diffusion coating". The Examiner takes the position that Eyraud et al. provides such a disclosure.

As will be set forth in greater detail below, it is respectfully submitted that Claims 1, 2, 4, 6, and 12 do not nearly recite "a diffusion coating" as asserted by The Examiner, but rather recite "a chemisorption-dissociation-diffusion coating". It is further submitted that Eyraud et al. includes no disclosure whatsoever of a chemisorption-dissociation-diffusion coating.

It is further noted that Claims 17, 19, 23, 24, and 31 did not previously recite any type of "diffusion coating", but that Claim 17 is amended herein to additionally recite "a

chemisorption-dissociation-diffusion coating”. Since Claims 19, 23, 24, and 31 depend directly or indirectly from Claim 17, they likewise include such additional recitation by dependence.

The Examiner is respectfully requested to withdraw the obviousness-type double patenting for the reasons mentioned here and more fully set forth below. It is submitted, however, that Applicant would be willing to consider a terminal disclaimer if The Examiner ultimately does not agree with the position taken by Applicant.

#### Allowable Subject Matter

The Examiner has indicated that Claims 9, 11, 16, 20, 22, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant gratefully acknowledges the allowability of such claims, and has amended Claims 20, 22, and 30 to each be in independent form in the indicated fashion. However, it is submitted that Claims 9, 11, and 16 are allowable inasmuch as they depend from Claim 1 which, as will be set forth in greater detail below, is submitted to be allowable. Applicant would be willing to consider an amendment of Claims 9, 11, and 16 into independent form if The Examiner ultimately does not agree with the position taken by Applicant.

#### Claims 1-3 Rejected Under 35 U.S.C. §102(b) Over Anderson et al. (U.S.P.N. 5,342,431)

The Examiner has rejected Claims 1-3 on the ground of anticipation over Anderson et al. In this regard, The Examiner takes the position that Anderson et al. teaches a support body having “a diffusion coating”. The rejection is respectfully traversed.

As mentioned above, Claim 1 recites that the transmission member includes “a chemisorption-dissociation-diffusion coating”, and such a coating is not disclosed in Anderson et al. Rather, Anderson et al. is directed solely toward a microporous membrane. Indeed, Anderson et al. states at Column 6, Lines 11-14, “It is the object of the present invention to deposit an even finer layer of microporous ceramic material on such a support.” Anderson et al. also states at Column 5, Lines 21-25, “Subsequent controlled drying of the deposited gel film particles in the face of the porous support, and firing of the gel, can lead to a crack-free ceramic membrane of uniform thickness and of uniform porosity in a reproducible, reliable and efficient manner.” Anderson et al. further states at Column 4, Lines 14-19, “It is an object of the present invention to enable the reliable and convenient construction of a microporous metal oxide

ceramic membrane deposited on a porous support which is useful for very critical filtration operations such as ultrafiltration, reverse osmosis, and gas separation.” (Emphasis added).

It is submitted that any type of gas separation that may be achieved using the microporous ceramic membrane of Anderson et al. is achieved because of the microporous properties thereof. In effect, the microporous ceramic membrane of Anderson et al. is at most an extremely fine filter, which is substantially different than the chemisorption-dissociation-diffusion coating recited in Claim 1 of the instant patent application.

It is noted that chemisorption-dissociation-diffusion is defined on page 10 of the instant application as being “molecular chemisorption and dissociation of hydrogen along the high pressure side of the metal coating 16, proton and electron diffusion through the lattice of the metal coating 16, and proton and electron reassociation and recombination and desorption of molecular species along the opposite side of the metal coating 16.” The chemisorption-dissociation-diffusion transport phenomenon is thus submitted to be fundamentally different than the mere filtration feature of Anderson et al. Applicant would be willing to have an expert submit a declaration attesting to the substantial differences between a chemisorption-dissociation-diffusion coating and the microporous ceramic membrane of Anderson et al. if any doubt remains.

It is thus submitted that the rejection of Claim 1 on the ground of anticipation over Anderson et al. has been successfully overcome. Inasmuch as Claims 2 and 3 each depend directly from Claim 1, the rejection of Claims 2 and 3 on the ground of anticipation over Anderson et al. is likewise submitted to be successfully overcome. Withdraw of the rejection is thus requested.

It is submitted that Claim 3 is independently allowable apart from its dependence from Claim 1. The Examiner apparently takes the position at page 5 of the instant Office Action that an increase in particle size necessarily corresponds with a decrease in compaction between particles. Applicant would respectfully disagree. While, in the abstract, larger particles potentially will have greater amounts of open space around them than smaller particles, it is nevertheless submitted that such larger particles could become compacted, such as through a mechanical compaction operation, for instance, to have less open space around them than the relatively smaller particles. It is thus submitted that particle size and degree of compaction are not *necessarily* related, as suggested by The Examiner. Anderson et al. does not stand for the

proposition suggested by the Examiner and includes no discussion whatsoever of compaction. Claim 3 is thus submitted to be allowable apart from its dependence from Claim 1.

Rejection Under 35 U.S.C. §103(a) Over Anderson et al. in View of Abe (U.S.P.N. 4,865,630)

Claims 6-8, 10, 12-15, 17-19, 21, 23-25, 27-29, and 31 are rejected as being obvious over Anderson et al. in view of Abe. It is respectfully submitted, however, that such rejected claims each recite “a chemisorption-dissociation-diffusion coating”, either directly or by dependence. It is submitted that neither Anderson et al. nor Abe, whether considered individually or in combination, include any teaching or suggestion of a chemisorption-dissociation-diffusion coating. Anderson et al. and Abe are at most directed toward porous membranes that do not support chemisorption-dissociation-diffusion transport.

It is thus submitted that neither Anderson et al. nor Abe, whether considered individually or in combination, teach or suggest all of the elements of any of Claims 6-8, 10, 12-15, 17-19, 21, 23-25, 27-29, and 31 inasmuch as they fail to teach or suggest a chemisorption-dissociation-diffusion coating. Moreover, Claims 6-8, 10, and 12-15 depend directly or indirectly from Claim 1, which is submitted to be in condition for allowance, and that Claims 18-19, 21, 23-25, 27-29, and 31 depend directly or indirectly from Claim 17, which is likewise submitted to be in condition for allowance. Withdrawal of the instant rejection on the ground of obviousness over Anderson et al. in view of Abe is respectfully requested.

Rejection under 35 U.S.C. §103(a) Over Eyraud et al. in View of Abe and Anderson et al.

Claims 1-8, 10, 12, 13-15, 17-18, 20-21, 23, and 27-29 are rejected as being obvious over Eyraud et al. in view of Abe and Anderson et al. The rejection is respectfully traversed. It is submitted that Claim 20 is erroneously listed here as being rejected on the ground of obviousness, it is being noted that Claim 20 is indicated at two locations elsewhere in the instant Office Action as being merely objected to.

It is respectfully submitted that all of Claims 1-8, 10, 12, 13-15, 17-18, 20, 21, 23, and 27-29 recite “a chemisorption-dissociation-diffusion coating”, either directly or by dependence, it is further submitted that none of the references, whether considered individually or in combination, include any teaching or suggestion of such a chemisorption-dissociation-diffusion coating. Eyraud et al. at most is directed toward a porous membrane. The metallization disclosed therein at most results in “porous metallic films” disposed thereon. See Column 1, Line 69 of Eyraud et al. The references, whether considered individually or in

combination, at most disclose porous membranes that do not support chemisorption-dissociation-diffusion transport.

It is thus submitted that the references, whether considered individually or in combination, fail to teach or suggest all of the elements of Claims 1-8, 10, 12, 13-15, 17-18, 20, 21, 23, and 27-29 since the references fail to teach or suggest a chemisorption-dissociation-diffusion coating. It is also noted that Claims 2-8, 10, 12, and 13-15 depend directly or indirectly from Claim 1, which is submitted to be in condition for allowance, and that Claims 18, 20, 21, 23, and 27-29 depend directly or indirectly from Claims 17, which is likewise submitted to be in condition for allowance. Withdrawal of the instant rejection on the ground of obviousness is thus respectfully requested.

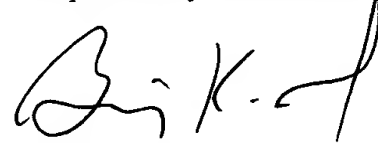
#### Miscellaneous

The art made of record but not applied has been reviewed and is deemed to be less relevant than the art applied.

#### Conclusion

For the foregoing reasons, the objection to the drawings is requested to be withdrawn, and the double patenting rejection is likewise requested to be withdrawn. The various rejections of the pending claims are submitted to be successfully overcome, and are likewise respectfully requested to be withdrawn. If any matters remain unresolved, a telephone call to the undersigned would be welcomed.

Respectfully submitted,



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